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GEOMAGNETIC DATA: BANGKOK, THAILAND OCTOBER-DECEMBER 1966

Douglas J. Barnes, et al

Stanford Research Institute
Menlo Park, California

December 1967

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Geophysical Data Report

GEOMAGNETIC DATA
BANGKOK, THAILAND — OCTOBER-DECEMBER 1966

By: DOUGLAS J. BARNES JOHN CHAPMAN

Prepared for:

U.S. ARMY ELECTRONICS COMMAND
FORT MONMOUTH, NEW JERSEY 07703

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BANGKOK, THAILAND

STANFORD RESEARCH INSTITUTE
MENLO PARK, CALIFORNIA

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I INTRODUCTION

Geomagnetic observations are being carried out at the Electronics Laboratory of the Military Research and Development Center (MRDC), a joint Thailand-United States organization at Bangkok, Thailand. The cooperation and participation of the staff members of the Thailand Ministry of Defense and the support of the United States Advanced Research Projects Agency and the United States Army Electronics Laboratory have made it possible for the data presented in this report to be accumulated.

The information about the site in Table I is pertinent.

Table I

GEOMAGNETIC SITE AT BANGKOK, THAILAND

Geographic		Geomagnetic			
Latitude	Longitude	Latitude	Longitude	DIP*	Declination*
13.72°N	100.57°E	2.5°N	169.83°E	10°27'N	0°10'W

The equipment at the site consists of the following:

Instrument: Varian V-4938A Rubidium Magnetometer
Full-Scale Sensitivity: 100γ ($10^5\gamma$ = 1 gauss)
Chart Speed: One inch per hour
Time Scale: Local time GMT + 7 hours
Range: Step-Variable, in 90γ increments.

*Values obtained from the Geodesy Department, Ministry of Defense, Bangkok, Thailand.

II DISCUSSION

The data contained in this Bulletin are obtained with a Varian o V-4938A Rubidium Magnetometer. The data base is available in two forms: (1) the continuous magnetogram recording and (2) a digital printout every 2 minutes, both measuring the total geomagnetic field intensity (F).

The hourly mean values of the total geomagnetic field intensity are given in Tables II through IV and are obtained by calculation from the digital data. The tabulation is for local mean time (GMT + 7 hours). The monthly mean values vs. local time of day are given in the bottom line of the tables and plotted in Figs. 1 and 2.

The Varian chart recorder used with the V-4938A magnetometer has an automatic range-changing system that shifts the range of the recording by 500γ when either chart extremity is reached. In Fig. 3 *et seq.* the range of F shown at the left of the chart is for the beginning of the day.

Magnetograms with a mean local time scale (GMT + 7 hours), showing disturbed days are given as follows:

(1) Figures 3 through 5--the three most disturbed days of the month.

(2) Figure 6--other days of interest--e.g., those showing a sudden commencement, or highly disturbed ($k_p \geq 5$).

Table II

MEAN HOURLY TOTAL GEOMAGNETIC FIELD INTENSITY (F) AT BANGKOK -- October 1966

Day \ Hr *	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	763	762	761	760	761	762	762
4	764	764	765	768	769	771	770	772	789	788	801	781	795	770	762	756	752	744	747	750	762	752	753	773
5	783	790	785	764	744	740	720	750	745	773	760	770	770	749	720	698	660	657	695	717	716	720	720	725
6	718	733	738	749	742	740	735	743	759	778	775	773	748	736	741	743	742	743	746	731	730	753	734	733
7	733	734	741	747	750	748	749	782	759	756	791	804	794	783	777	774	--	768	764	759	757	747	738	733
8	739	743	746	747	749	754	759	754	762	768	775	783	786	780	768	752	748	748	744	741	744	745	749	753
9	753	758	578	758	759	759	759	762	774	784	795	796	788	772	754	746	747	754	756	755	749	744	744	763
10	755	754	757	758	761	760	756	755	800	--	--	804	798	806	788	765	779	764	764	762	760	760	760	762
11	761	761	763	769	768	767	765	765	775	798	815	778	809	793	769	--	771	771	772	769	769	769	768	769
12	770	770	770	770	770	769	767	777	807	826	844	879	859	774	776	776	777	772	774	774	768	770	768	764
13	769	771	776	771	773	764	761	766	784	804	819	825	820	795	780	783	772	774	768	760	758	765	768	774
14	774	778	767	770	769	766	766	776	796	810	816	806	830	784	780	770	770	771	781	780	778	775	776	778
15	777	775	778	772	768	767	772	779	796	805	816	821	810	791	780	774	776	785	779	778	780	781	781	778
16	770	785	767	771	777	774	780	782	803	802	827	811	820	799	736	686	695	697	689	681	666	673	678	711
17	716	748	743	741	738	743	751	754	776	781	770	772	773	773	769	764	762	760	760	761	762	761	761	757
18	750	746	753	757	759	760	758	763	809	810	826	834	823	808	788	780	773	769	766	764	762	760	759	768
19	762	765	764	764	766	765	765	769	784	804	816	821	814	796	781	770	764	766	767	769	768	767	767	767
20	763	767	767	769	767	767	770	778	795	811	826	827	818	807	819	780	774	767	770	767	764	764	765	767
21	770	773	770	771	771	707	770	777	805	810	823	827	816	802	792	783	777	775	776	770	764	762	765	769
22	769	770	771	771	774	776	777	784	804	813	819	822	814	802	794	787	785	784	782	779	777	775	774	777
23	776	775	776	775	773	777	769	771	783	801	811	815	814	805	795	792	789	787	784	783	782	783	788	788
24	788	788	788	787	790	795	797	805	823	834	846	841	825	814	806	810	796	808	798	793	783	770	737	739
25	757	767	768	765	772	765	763	766	788	793	808	808	802	785	772	761	746	743	735	736	748	748	750	756
26	763	767	774	764	761	758	758	774	793	804	823	802	789	784	772	764	759	759	759	759	751	746	761	753
27	759	750	751	758	753	752	755	759	770	783	792	803	796	789	779	770	766	764	763	762	762	758	754	754
28	762	764	762	761	764	761	760	768	781	790	803	808	803	793	781	772	768	767	766	766	768	767	767	767
29	766	767	766	765	763	766	769	778	796	812	818	822	815	790	783	776	774	773	770	769	768	767	766	765
30	768	690	--	--	--	--	769	773	807	823	834	835	826	812	796	784	784	784	793	801	802	812	785	768
31	765	755	754	755	755	775	770	781	775	772	785	799	764	748	750	746	741	742	--	--	--	--	--	--
Mean	761	761	764	764	763	761	763	770	787	794	809	810	804	787	775	765	761	764	762	761	759	759	757	760

* LOCAL TIME = GMT + 7 HOURS.

TABULATED VALUES ARE THE LAST THREE DIGITS ONLY OF THE TOTAL FIELD STRENGTH (F) IN γ.
TO OBTAIN TOTAL FIELD STRENGTH IN γ ADD 41,000

DB 4240-

Table III

MEAN HOURLY TOTAL GEOMAGNETIC FIELD INTENSITY (F) AT BANGKOK -- November 1966

Day \ Hr *	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5	--	--	--	--	--	--	--	--	--	EQUIPMENT FAILURE				--	--	--	--	--	--	--	--	--	--	--
6	--	--	--	--	--	--	--	--	--			--	--	--	--	--	--	--	--	--	--	--	--	--
7	--	--	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--	--	--	--	--	--
8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	751	752	752	748	725	718	728	733	[illegible]	737
11	739	737	734	731	739	739	746	751	750	749	747	763	765	--	--	--	749	729	734	740	735	737	740	742
12	741	745	744	748	748	750	750	741	728	721	729	730	736	726	723	714	716	729	743	744	744	744	745	743
13	736	726	720	732	743	741	746	754	763	741	737	718	721	700	673	660	657	667	703	713	706	706	716	718
14	717	718	723	729	731	734	728	723	724	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
20	--	--	--	--	--	--	--	--	--	--	--	EQUIPMENT FAILURE			--	--	--	--	--	--	--	--	--	--
21	--	--	--	--	--	--	--	--	--					--	--	--	--	--	--	--	--	--	--	--
22	--	--	--	--	--	--	--	--				--	--	--	--	--	--	--	--	--	--	--	--	--
23	--	--	--	--	--	--	--	--			--	--	--	--	--	--	--	--	--	--	--	--	--	--
24	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
25	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
26	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
27	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
28	--	--	--	--	--	--	--	--	844	813	818	808	804	794	785	788	783	766	761	751	738	737	755	750
29	775	756	757	765	766	768	773	780	798	804	808	806	788	765	742	746	741	733	736	747	753	760	756	760
30	761	762	764	771	779	791	807	814	813	812	815	810	800	778	745	735	732	724	729	728	734	750	765	742
31																								
Mean	745	741	740	746	751	754	758	761	774	773	776	773	769	753	737	733	733	728	733	734	734	738	745	742

* LOCAL TIME = GMT + 7 HOURS.

TABULATED VALUES ARE THE LAST THREE DIGITS ONLY OF THE TOTAL FIELD STRENGTH (F) IN γ.
TO OBTAIN TOTAL FIELD STRENGTH IN γ ADD 41,000

DB-4240-

Table IV

MEAN HOURLY TOTAL GEOMAGNETIC FIELD INTENSITY (F) AT BANGKOK -- December 1966

Day \ Hr*	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	742	747	761	746	750	756	756	780	783	790	805	792	770	761	755	761	754	756	755	751	764	759	753	752
2	757	760	758	760	762	760	763	765	774	781	786	790	780	774	762	758	764	761	764	768	766	762	762	762
3	762	763	764	765	765	768	772	777	788	796	803	804	790	780	781	783	780	773	775	773	772	770	768	772
4	775	777	778	780	783	780	782	791	806	812	815	823	824	813	770	776	765	773	761	758	741	731	733	747
5	749	758	751	756	756	755	754	756	763	771	771	774	760	761	750	741	751	761	764	761	763	762	762	763
6	775	782	752	741	736	737	742	753	766	764	771	768	764	753	746	744	746	751	753	753	752	754	753	751
7	754	755	754	756	761	760	763	770	773	776	781	777	773	764	763	758	763	765	765	766	766	765	763	765
8	768	768	767	767	762	767	770	780	793	805	813	821	817	801	788	780	775	769	766	768	772	771	772	773
9	773	775	775	774	772	769	775	782	794	804	811	812	799	779	767	764	765	774	775	776	773	772	771	773
10	776	776	776	777	779	781	785	796	808	819	823	819	806	790	778	768	766	774	779	780	778	777	780	779
11	785	781	780	783	783	787	794	804	811	812	819	817	808	798	782	772	773	778	782	784	783	779	777	774
12	774	776	773	773	775	776	779	787	800	818	830	826	813	795	784	775	775	781	784	783	784	777	776	775
13	774	773	775	780	782	784	797	817	845	880	859	811	803	786	770	783	776	777	770	756	745	739	718	729
14	737	740	746	753	758	765	772	774	786	797	799	784	768	768	766	768	773	769	766	776	757	746	644	630
15	653	657	688	696	692	696	713	719	731	741	757	760	737	726	726	717	716	716	727	727	722	725	740	732
16	749	735	730	730	731	734	740	747	755	768	777	784	773	761	752	744	744	737	739	740	741	742	744	750
17	759	765	762	762	764	759	758	764	771	786	797	795	794	792	791	777	768	759	748	747	742	748	756	748
18	746	750	750	754	766	758	758	764	776	776	782	785	779	778	771	765	764	761	759	758	754	753	753	754
19	755	753	758	756	757	759	757	763	773	780	780	781	782	776	770	764	763	760	758	766	76[illegible]	760	760	761
20	763	763	762	762	766	763	770	782	800	796	797	797	795	780	775	772	761	770	760	761	76[illegible]	763	759	761
21	761	754	748	750	757	766	770	772	--	--	--	774	771	766	763	764	756	747	758	760	759	749	765	751
22	746	746	752	748	752	752	751	759	774	773	783	802	811	800	785	779	778	777	770	755	751	752	764	753
23	754	752	964	759	759	752	753	751	758	769	777	780	775	772	770	770	768	761	750	753	754	755	761	765
24	763	777	774	766	770	765	773	769	779	792	800	822	809	771	745	735	735	737	751	753	754	751	753	757
25	756	752	758	762	762	764	763	787	777	786	796	798	789	772	760	756	753	754	757	751	745	744	752	759
26	749	770	770	773	771	770	773	796	789	785	788	801	802	794	776	759	746	744	744	746	735	742	755	745
27	741	747	760	754	756	767	777	774	803	774	776	783	766	750	747	735	733	726	733	732	750	739	737	736
28	746	752	742	746	745	748	749	754	775	778	777	777	772	770	756	744	764	744	742	754	751	765	750	750
29	748	753	757	755	751	753	760	769	782	792	786	784	777	768	760	758	760	762	764	766	767	762	761	761
30	761	763	761	759	759	760	773	773	794	806	811	819	805	791	770	766	762	766	762	757	748	746	756	770
31	755	758	758	757	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mean	755	757	758	758	759	760	765	771	787	791	796	795	787	776	766	761	760	759	760	759	757	755	753	753

* LOCAL TIME = GMT + 7 HOURS.

TABULATED VALUES ARE THE LAST THREE DIGITS ONLY OF THE TOTAL FIELD STRENGTH (F) IN γ.
TO OBTAIN TOTAL FIELD STRENGTH IN γ ADD 41,000

DB-4240-

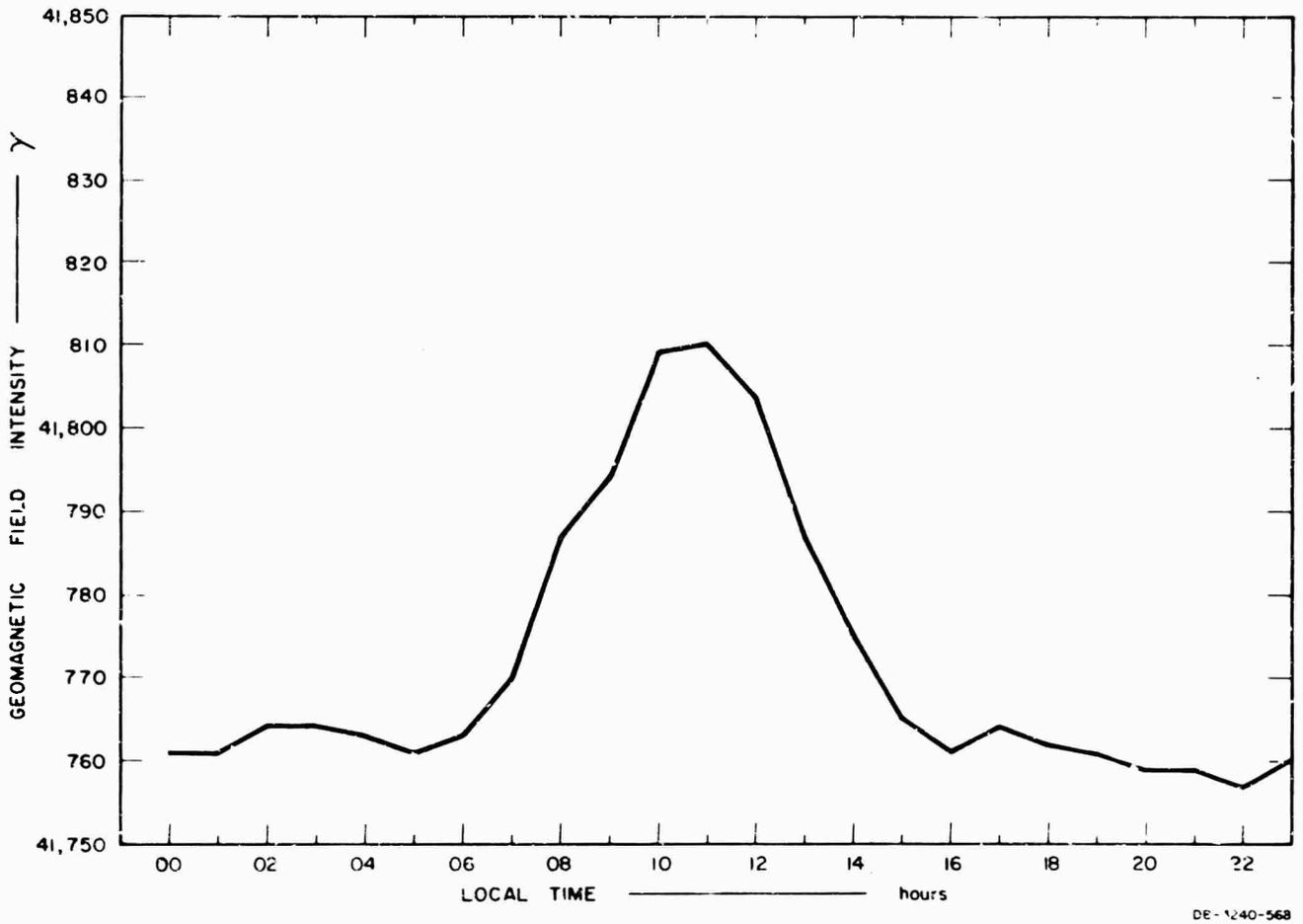


FIG 1 MONTHLY MEAN TOTAL GEOMAGNETIC FIELD INTENSITY F AT BANGKOK – OCTOBER 1966

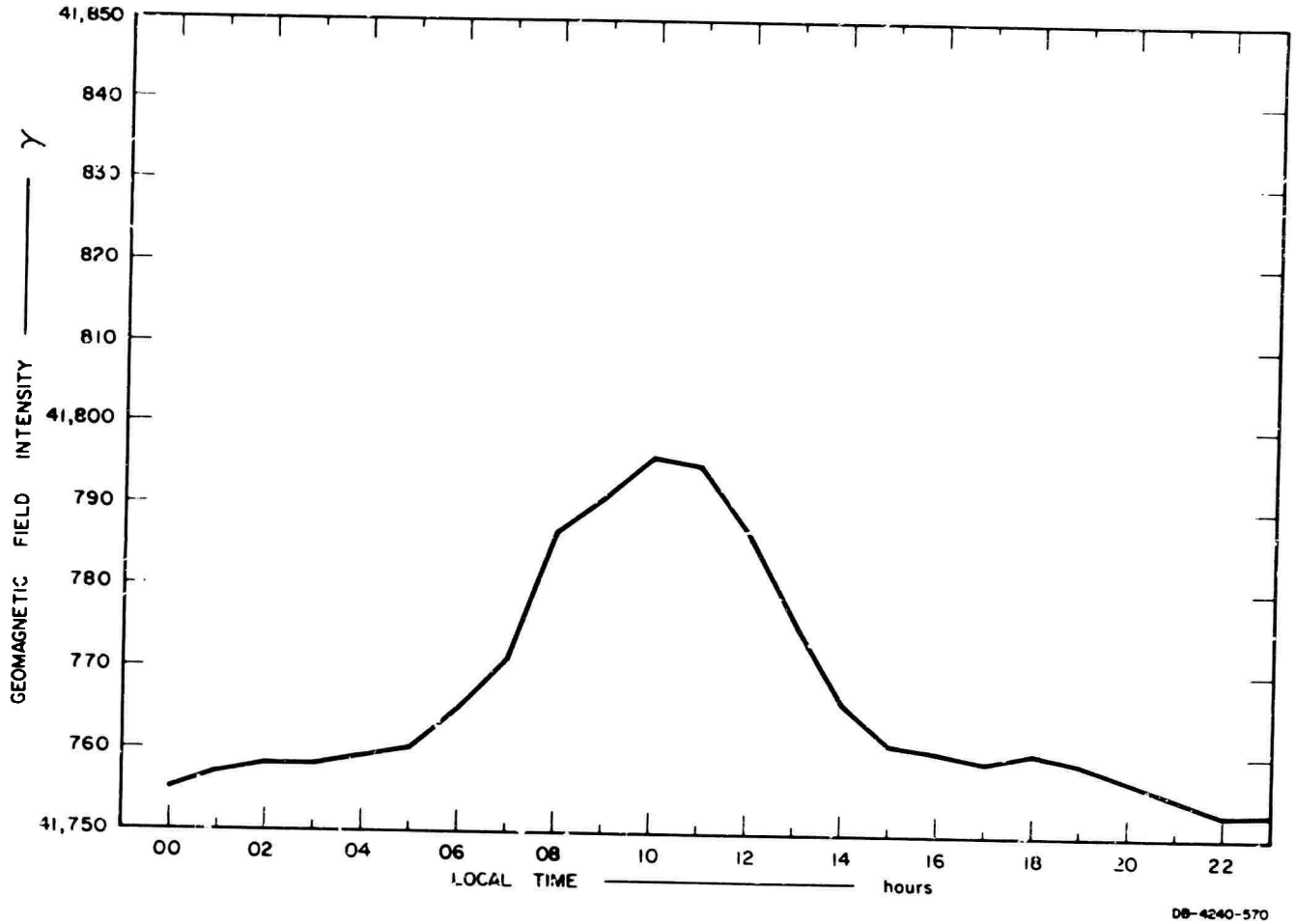
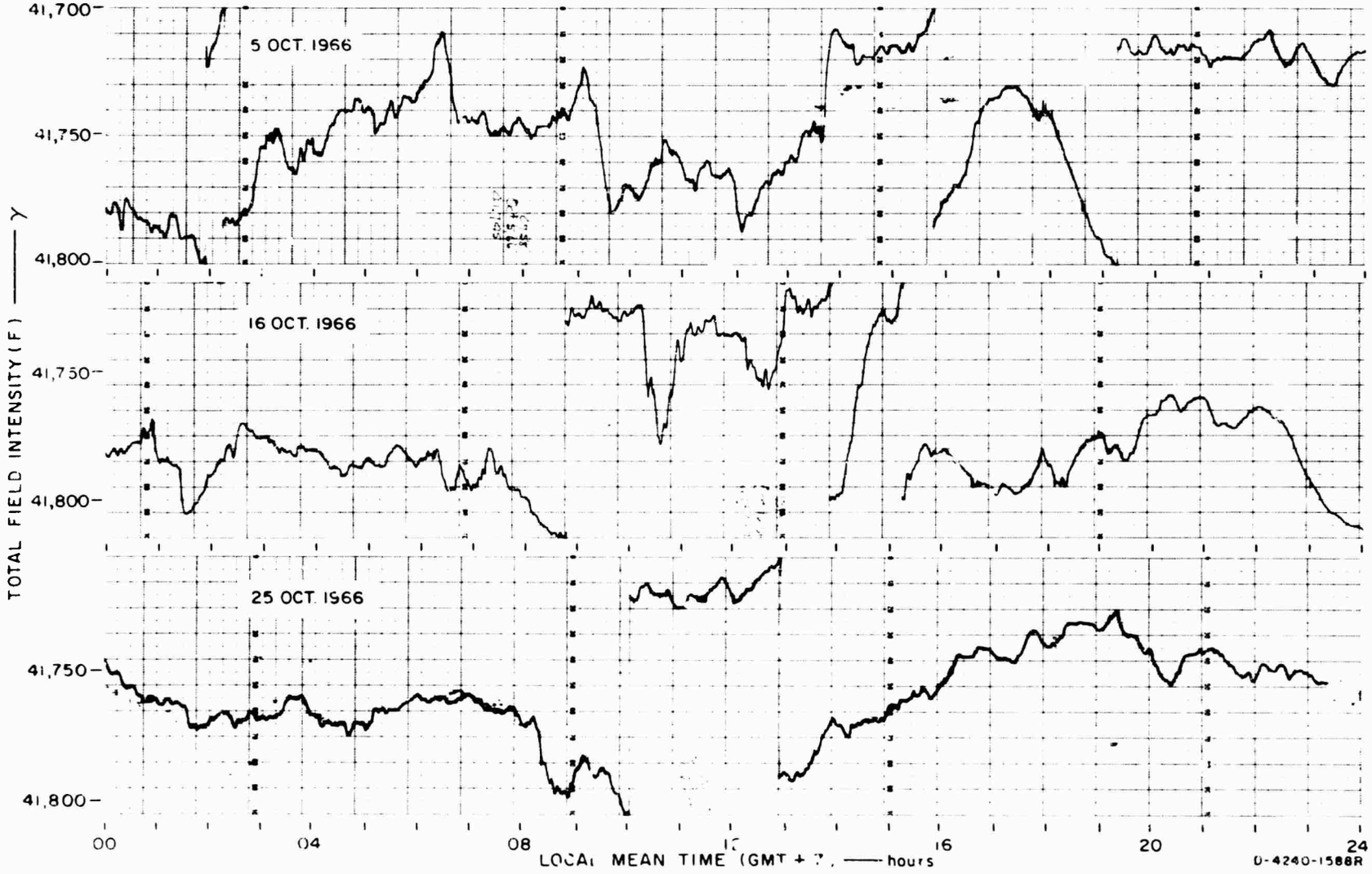


FIG 2 MONTHLY MEAN TOTAL GEOMAGNETIC FIELD INTENSITY (F) AT BANGKOK – DECEMBER 1966



G. 3 MAGNETOGRAMS FOR THE THREE MOST DISTURBED DAYS IN OCTOBER 1966 (5th, 16th, and 25th)

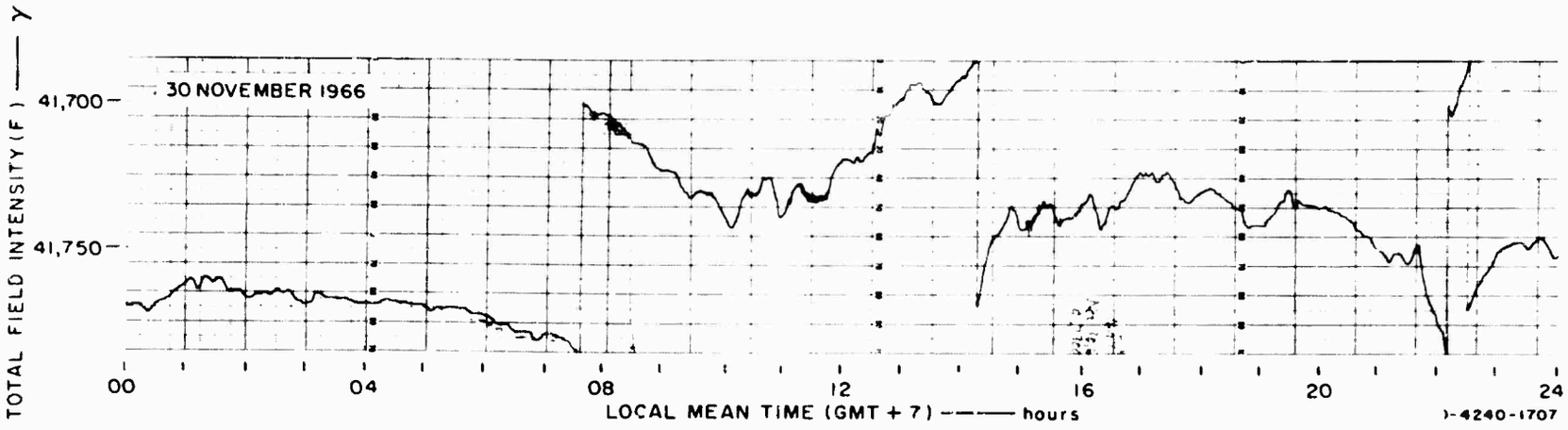


FIG. 4 MAGNETOGRAM FOR DISTURBED DAY IN NOVEMBER 1966 (30th)

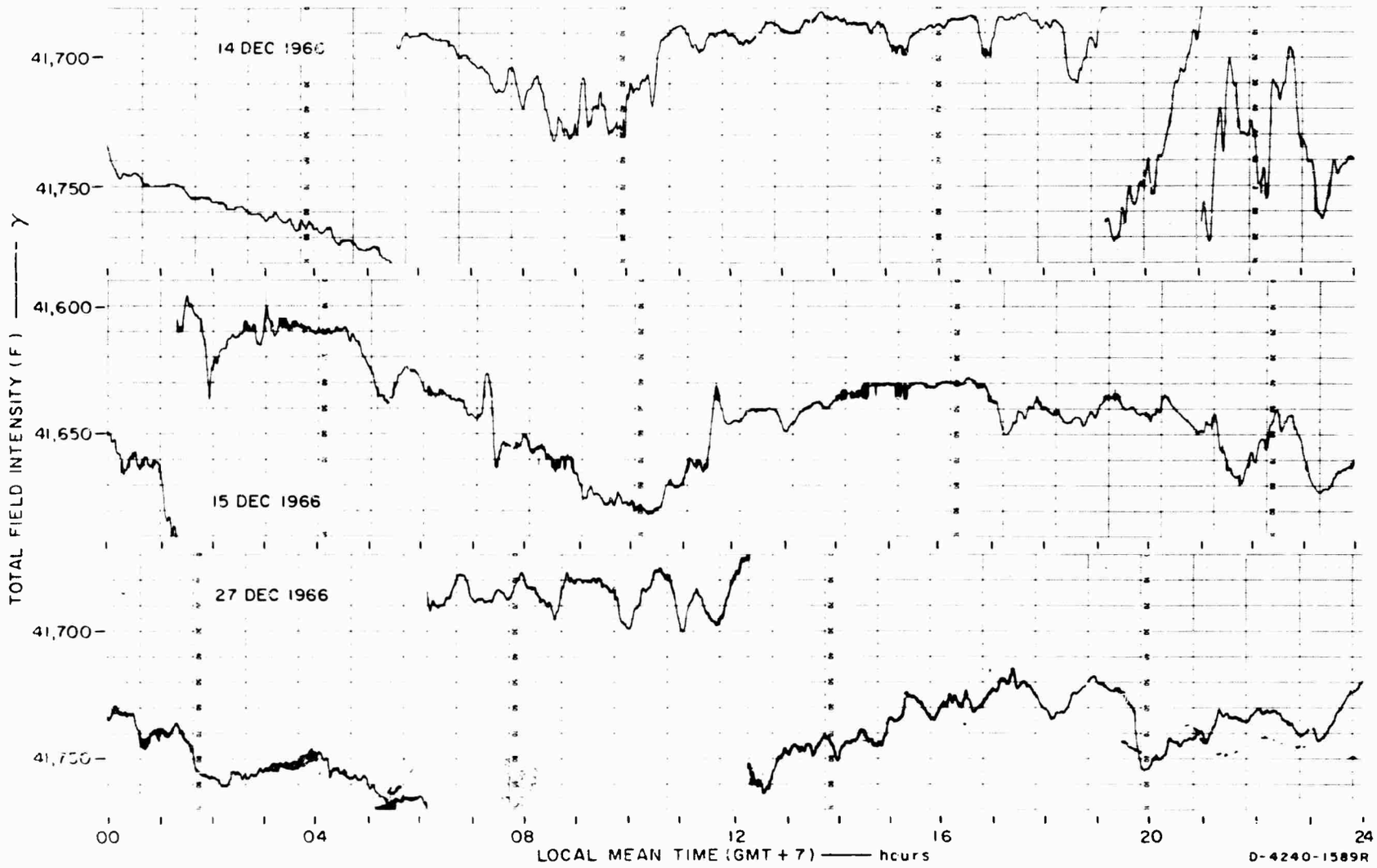


FIG. 5 MAGNETOGRAMS FOR THE THREE MOST DISTURBED DAYS IN DECEMBER 1966 (14th, 15th, and 27th)

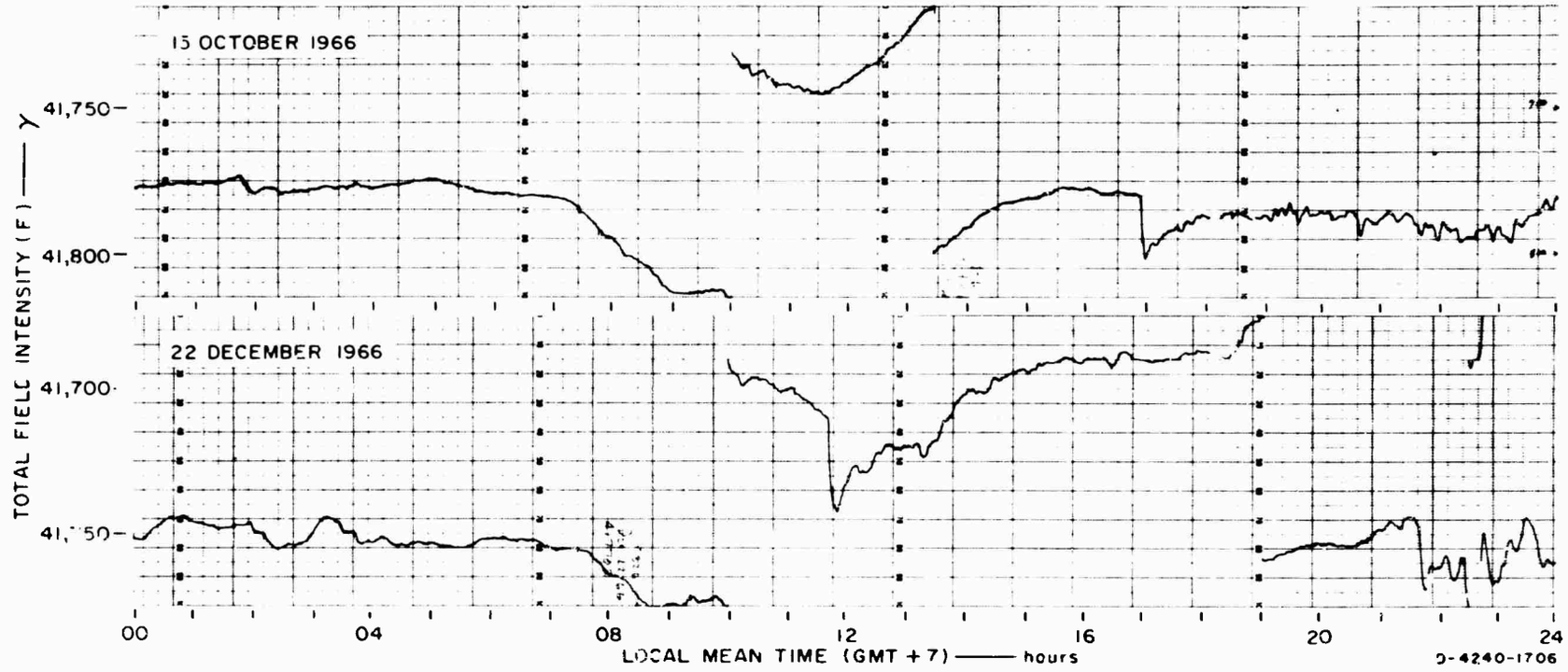


FIG. 6 MAGNETOGRAMS FOR DAYS OF SUDDEN COMMENCEMENTS 15 OCTOBER AND 22 DECEMBER 1966

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13 ABSTRACT

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14 KEY WORDS	LINK A		LINK B		LINK C	
	ROLE	WT	ROLE	WT	ROLE	WT
Magnetometer						
Total field intensity						
Rubidium vapor						
Magnetograms on disturbed days						
Bangkok, Thailand						